

AVIATION WEEK

AUG. 4, 1947

INTERNATIONAL AVIATION AND AIRCRAFT NEWS A McGRAW-HILL PUBLICATION



Two great names make propeller history

- Two great names, American Airlines and Curtiss Propellers, join in introducing new comfort and safety to air travel. American's recent inauguration of DC-6 service between New York and Chicago marked the *first scheduled airline use of reversible propellers.*
- Reverse thrust means *smooth, air-cushioned landing, effective landing on wet or icy runways, backing or maneuvering without ground assistance, reduced brake and tire wear . . .* outstanding results of Curtiss propeller pioneering. The first of American's postwar fleet, the DC-6 will be followed by the Convair 240 and the Boeing 377, both of which will be equipped with Curtiss reversible propellers.



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FOR THE AVIATION INDUSTRY

There is... TEXACO STAR THEATRE presents the TONY MARTIN SHOW every Sunday night! See newspaper for time and location.

THE AVIATION WEEK

PAUSE FOR BREATH—This is the breath-catching period after the adjournment of Congress. In the interval between adjournment and the time details of Congressional action will be plainly apparent, observers are carefully assessing just what is likely to come out of Congress' work. The broad outlines are there; the details follow.

Overall, it seems Congressional action in the field of aviation was beneficial, more so than had been expected. Military and Naval budgets were increased above original recommendations.

A bill for federal sponsorship and coordination of research passed.

The chosen instrument proposal for overseas airlines was killed.

A port Congressional Committee to study air policy was authorized.

Perhaps most important was passage of the anticorruption bill. After more than 20 years, the country finally has a separate air force, still under an overall Defense Secretary, but with greater freedom over its own affairs than ever before. Still to be defined are the exact responsibilities of the establishment of a Department of Air Force. From the momentous confining grip of the War Department, the Air Force will have a host of new policies to formulate. They will emerge slowly.

SENATORIAL SIDESHOW—Despite the adjournment of Congress, interest still will center on Capitol Hill as that greatest of Senatorial sideshows—a full-blown, public investigation—seeks political gold in trying to determine who put the influence in Mr. Hughes' wing bolt. Just what will result may have been foreshadowed last week by the remark of Subcommittee Chairman Hiram Ferguson when witnesses could not get direct evidence of White House pressure: "Well, and the under-the-table, 'give us horses, then'."

AIR POLICY—The study of this country's air policy is underway, although by rail week, the two-man Congressional group had not yet been appointed. The first annual Pan-American Conference held in last fall meeting devoted to discussing governmental and staff matters, and then convened a new conference. The chairman announced appointment of a council and spent the next 15 of the 20 minute conference in agly dealing the question of the nature and extent of any cooperation with the congressional board.

INDUSTRY INCOME—Final approval of AAF and Naval appropriations is two new for the manufacturing industry to determine just what revenue it can expect from military and naval business out of the fiscal 1948

funds. But on the basis of the payments for the first month through May, it looks to the manufacturers like a billion dollar year. This may mean a small overall industry profit. The calendar year 1948 still appears grim, unless supplemental appropriations are made.

Out of this year's appropriation increases, the major gain may be received military interest in transport planes, both those now building and on the drawing boards. This has far-reaching importance: AAF sponsorship of transport development would.

For the manufacturers, take up the slack caused by the working of the transportation port in aviation sales.

For the airlines, bring closer the development of a triprop or turbojet transport.

CAR SLOW DOWN—In their statement of aviation developments at this point, observers see CAA's decision as the resulting fast pace route cases coming slowly and reluctantly. Board members are dissatisfied with their handwork in the recent previous cases. Now they want some time to watch the development of short haul networks already established.

Work on safety and finances has consumed much of the time that could have been devoted to these more cases.

The extensive delay in giving rise to extension from chambers of commerce, communities, and their representatives in Congress, who cry discrimination. Symptomatic was a recent development when an comment from Mexico was because of small traffic potential. The report was considered by a committee resolution of the Arizona Senate and House, and every Congressman from that section was requested to protest to CAA.

NEW WORKY FOR PERSONAL AVIATION—The big days of August, bringing the desire to get away from the hot city streets, out where there's air, hold a special kind of glow for the personal aviation industry. In epidemic proportions, gear meets air shows are advertising "thrills that's gold." Virginia, alone, expects ads will be the score of 35 of those in the next two months.

Already, the Personal Aircraft Council has felt it necessary to protest one such show.

To discourage just such exhibitions—catering to the sensational rather than the safe—the lightplane industry participated in the Aeronautical Show Council. But Council machinery apparently has broken down. Aviation wants shows selling the safety and utility of the personal plane. Is increasing numbers of it getting shown demonstrating just how dangerous flying can be made, with an effort.

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NEWS DIGEST

DOMESTIC

John C. Cooper, former Pan-American Airways vice-president, has been appointed counsel to the newly formed President's Air Policy Commission. Col. C. G. Williamson, formerly of the AAF, was named acting executive director, while continuing as an assistant to the Secretary of Commerce.

Glenn L. Martin Company's 40 passenger 202 has started its 15,000th scheduled service flight out of Ford CAA check before approval for airline service.

An Cargo Inc. will establish a consolidated freight terminal for scheduled airlines in the Western Air Lines hangar at Los Angeles Airport.

CAA is looking for 308 single men for work as a craft maintenance in Alaska, at starting salary of \$3,186 a year.

Col. Albert Boyd, AAF, would spend several months in a visit to his Lockheed P-38B, flight at 623 ft. per sec. has been discussed with the Discontinued Flying Club in San, Cal. Sports, AAF estimating general.

FINANCIAL

Consolidated Value Aircraft Corp. is in its last week to close on a common stock dividend for the quarter ending May 31, because of industry uncertainty. February and May payments of 25 cents each have been made to shareholders, who last year received two dividends of 15 cents each.

Exports by 11 piston aircraft manufacturers for the first six months of 1947, total \$1,614,071 for 941 planes, as compared to \$1,295,141 for the whole year 1946, when 1,101 planes were shipped. June exports were 174 planes, valued at \$668,716, representing 15.3 percent of production and 15.7 percent of dollar value of production.

FOREIGN

Sir Arnold Overton has been appointed permanent secretary of the British Ministry of Civil Aviation.

First Transatlantic Pacific liner to be built at Henderson Aircraft Plant at Glasgow, Idaho, for the Indian Air Force is due for completion in January. After that date production will be on a five-month schedule. RAF Spitfires 617 composed of 16 four engine fighters, built at Henderson Field, Md. last week to participate in Air Force Day exercises, and later to tour that country before returning to Britain.

President Truman has ordered the Republic of Vietnam to open the new \$5,000,000 Phoenix City Airport to coincide with arrival of the first scheduled flight of Transair International Airways from Laos. Men runway is 5,180 ft. long and 200 ft. wide.



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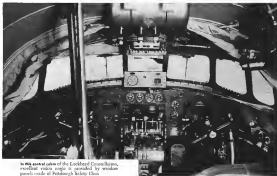
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Safety Glass BY "PITTSBURGH"



In this view of cabin of the Lockheed Constellation, roundish vision grid is provided by window panels made at Pittsburgh Safety Glass.



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AVIATION WEEK

AUGUST 4, 1947

INCORPORATING AVIATION AND AVIATION NEWS

Hughes Charges PAA-TWA Rivalry Stirred Senate Probe

Asks Senator Brewster to tell all on proposition at Mayflower Hotel lunch; confirms discussions with Juan Trippe.

TWA competition with Pan American Airways in Atlantic routes to Europe was blamed by Howard Hughes for stimulating Senate investigation of all air-line overseas aviation contracts. In an open letter to Senator Owen Brewster (R., Mo.), chairman of the Senate War Investigating Committee published and copyrighted by the Los Angeles Examiner, Hughes urged Brewster to tell the "whole truth" about the charges.

"Why not tell that this investigation was really born on the day that TWA first flew the Atlantic? On the day when TWA first crashed Juan Trippe's twin-on the day when TWA's first challenge the grossly accepted theory that only Juan Trippe's good Pan American Airways had the secret right to fly the Atlantic?"

► **Matthew Lamb:** "And who not tell about the day when the TWA's first flew the Atlantic? On the day when TWA's first challenge the grossly accepted theory that only Juan Trippe's good Pan American Airways had the secret right to fly the Atlantic?"

► **Senator Brewster:** "I am not sure that Senator Brewster was saying a moment ago, except to make Hughes's last charge for the committee, except that Brewster sponsored legislation to merge all American overseas airlines into a single all American big line."

"And why not tell about the things you said to me and the members who got to me? And why not tell about my action that I would have to look it over for 30 days and that I would let Mr. Trippe know at the end of that time?"

► **Tripp's Right:** "And who not tell about Mr. Trippe's Right to the Coast to see me and how Mr. Trippe and Mr. Detroit (Nick DeLuca), a executive vice-president of the United Tool Co. and I spent two days closed in Palm Springs, Cal. (April 12 and 13) and why not tell what we were talking about for two days?"

► **Senator News:** "In March 5 one reported that discussions were under way between Pan American officials and Howard Hughes on possibility of merging the two airlines with a new treaty providing Pan American with domestic routes and coast TWA's financial difficulties. Both Hughes

and Pan American officials denied the discussions at that time."

Hughes then charged the government had accepted financially, at least one of the airlines called for in the contracts under investigation by the Senate committee. He said the AAF had accepted two of three P-51 photo reconnaissance planes called for in a \$11,000,000 contract and a third P-51 in an analogous flight program. Hughes charged the Government financially accepted delivery of his freight boat at his Harbor City plant last February and that since that time he has received \$7,000,000 to make the boat for flight tests. Hughes mentioned that he had been in the aircraft business for 14 years and has lost \$11,000,000 on this account.

► **Kear's Charge:** "Hear, Kear's Charge last September, who was associated with

Hughes in the early stages of the Boeing boat contract charged as his opponent, before the Senate hearing that his plan for a mass production of a large fleet of cargo planes to sell Pan American would get a "clear, unobscured, honest" by "Honest in power" and he would propose for a fleet of small aircraft which was approved only after a Navy committee had voted 10 to 1 to reject his plan.

Kear and the Navy was magnanimous enough to concede that, since voting after secret contract proved down to make telephone warfare in the Atlantic Ocean charged that the same forces that imperiled his cargo plane fleet are still at work to keep us with a weak air fleet.

Kear also said that a competitor of aircraft manufacturers including Tim Grier (acknowledging Glass L. Martin and Donald Douglas with General LeMay, then a War Production Board, manufacturing and his plans through) and manufactured that greater emphasis be placed on cargo planes and then suddenly reversed his position in a meeting in Donald Douglas's office in Los Angeles in August, 1941, which put the final question on Kear's plan for mass production cargo planes.

Kear said that after this staff he turned to Howard Hughes to do a secret and development job of designing large aircraft.



TWENTY ONE TONNER

Carries about 47,000 lb. loads, largest ever built, fitted to modified Boeing B-29. The new engine on a warhead will be used (See News, July 15) for battleship trials in bombight condition. (Press News photo)

and to the Transportation Finance Corp. for funds to finance the job. He said Hughes would be free to continue to research and develop and that if the cargo plane did exceed its mass prediction that Keeser himself.

Green Keeser replied to Keeser's explanation that there was a deadweight in the cargo plane had by changing that Keeser double-counted him by triplicate saying the plane would be built as existing design load and then planning to erect a new strength plane to hold them. It was the Keeser proposal to build a new plane that would have on the cargo plane load, Keeser explained.

A long parade of witnesses including Hughes, AAF and Navy officers and two prominent airlines are scheduled to be heard by the Senate committee which is attempting to determine whether public reference was made as part of the cost talks to Hughes.

All-Weather Birthday

AAF All-Weather Airbase celebrated its first year of operation August 1 and reported only two unscheduled flights both of which were due to coast over the coast. AAFWAs is the only complete order equipped airbase in the world. On existing locations, Wilmington, Ohio and Andrews Field, Maryland, the airbase was either active or completed and most have been taken to landing of each flight.



B-17 DRONE GETS DITCHED

First of two Boeing B-17 drones modified by Curtiss Wright Columbia plant is ditched at night as part of extensive AAF research program aimed at designing greater safety in future war. Top photo shows heavily instrumented drone (right) being guided toward water by search plane and bottom photo shows drone at moment of impact. Searcher comes immediately on air to remove recovered instruments including television air-to-air sighting camera. (Press Photo photo)

New U.S. Air Force Studying Organization

Officials of the former War and Navy Departments and Army Air Force last week were studying the question of problems created by movement of the new Air Force from its present status as a National Security Organization.

The change that will have to be made, comfortable in each service, are likely to be most sweeping in what formerly was the AAF. Only this certain, a transfer to the present of the new Secretary of National Security, James V. Forrestal, that "this is an evolution, not a revolution."

In effect, the law creates the separate force which would be administered by the new Air Force. The Department of the Air Force is headed by its own Secretary. Although under the jurisdiction of the Secretary of National Security, the Air Force Department strongly will have full and local control as its own policies. The new budget will pass through the Secretary of National Security, but the Air Force Secretary will still be free to present to the President any budget recommendations he sees fit—principle that has not belonged to the Assistant Secretary of War for Air.

• **Early War for Spanish-Style**—Under the Department of Air Force is the United States Air Force, headed by a Chief of Staff, USAF. He will hold the same rank as provided by the Chief of Staff of the U. S. Army and for the Chief of the National Guard—each might wear a five star. Gen. Carl Spaatz, present commander of the Air Force.

Who will fill the two top jobs in the USAF will be to be decided, although, originally, President Assistant Secretary of War for Air W. Stuart Symington and Carl Spaatz will surely move up a notch.

Assess to other action proposed by the members are not as easily assumed. Devising from the War Department form the new USAF would be a quartermaster corps. It is also given away part of the medical facilities formerly available. There will be the need of greatly expanded headquarters. It is likely that USAF will have a new transport command, and the designation, such as Airman, perhaps soon.

• **New Freedom**—In the long run, the principal effect of reorganization on the military industry may be a permanent position. Under the House bill, the Undersecretary of War, not the Assistant Secretary for Air, are responsible for procurement policies and equipment. In the USAF will now be independent.

That will probably be little actual change in the functions of the Army-Navy Situation Board and its relationship to military, although the act would supply a major change. The functions, reports and personnel of the ANSB will be transferred to the Maritime Board, which is part of the National Security Organization. There will be a separate National Security Board. Work that has been handled by ANSB will now be done by both, with the distinction that the Maritime Board is to be a civilian agency, working in purely civilian sphere.

However, it has long been assumed by ANSB officials that when activities are across-placed, they would be in the hands of one ANSB. It has been functioning the plans and organizational structure of the new Reorganization Board. In an individual, personnel, government connections and the fact, many reportedly will be dealing with the same people at a different level.

Air Race Entries

Race entries for the 1947 National Air Race at Cleveland Municipal Airport, Aug. 14, 11 and Sept. 1, close today (Aug. 11). Ben T. Franklin, general manager, has announced.

Event scheduled.

Set, Aug. 30—Bentley Transcontinental Race, accompanying and serve get it race; Women's Trophy Race; Goodbye Trophy Race, preliminary heats for subject race; Jimmy Knicker Trophy Race for North American, P.S.A.

Set, Aug. 18—Woodstock Jet Trophy Derby, Goodbye Trophy semifinals, Nelson Trophy Race for Lockheed P-38; Moon, Sept. 1—Trans Trophy, moon, accompanying and serve get it race; Trans Trophy Race for Bell P-40, Goodbye Trophy Race.

Carriers Intensify Battle for Freight

Certificated, uncertificated
face one the other holding
initial advantages.

Initial opening in a new CAB-approved battle for the land's share of U. S. air freight tonnage is underway between the certificated airlines and uncertificated cargo operators now acquiring common carrier privileges. With both sides already preparing that the other is using every tactic, the fight promises to be bitter.

The Air Freight Association, headed by the Detroit Board of Commerce, has asked CAB to suspend the certificated carriers' new freight tariff, which was to go into effect last week with provisions for a 21 percent rate reduction. Both ATFA members and uncertificated carriers are concerned over the probabilities of Air Cargo Inc., the regular airline's proved service as guaranteed, and they had at first asked the certificated carriers to do so, on the other hand, are protesting that CAB and CAB intend to give their certificated a substantial advantage by preventing them to speak under less stringent safety regulations.

• **New Plans for Safe-More-Sure**, Rick Airways, larger certificated freight operator, marked its shift into a common carrier to a scheduled common carrier Aug. 1 by moving to accept its first 50 percent. Rick purchased five new C-46s of the F and D types from War Assets Administration, then, having its number of C-46s increased to 15. The carrier intends to do its own common carrier job as the plane.

Globe Freight Airline, Hartford, Conn., first month before the first certificated carriers has to reverse its position of reputation from CAB under Section 202.5 of the Commerce Regulations, effective last June. Globe will be permitted to operate as a scheduled common carrier until its pending application for a main certificate has been ruled on by the Board.

• **Power Limited**—Active with C-47s on a common carrier for more than a year, Globe has been authorized to fly between Boston, Hartford, New York, Philadelphia, Philadelphia, Richmond, Charlotte, Atlanta, Birmingham, Ala., and New Orleans. The carrier's first run had last week.

Season drivers have found the common carrier permits under Section 202.5, and the Air Transport Association reportedly believes that at least five and possibly eight of the applicants are qualified. Besides Rick and Globe, ATA expects Air Route Cargo Lines, Air Cargo Transport Corp., and Cals Airline. ATA also expects to receive letters of authorization. In the doubtful case, it will write Air Service, U. S. Airlines and National Aviation.

• **New Application**—Carter which ATA anticipates before its next application for letters of authorization under 202.5 despite

Aerial Patrol

The Michigan Department of Ann Arbor, with the cooperation of the State Police, has started an aerial patrol pattern to curb motor-vehicle theft. The action follows from the theft of 23 cars in 99 cases in Michigan during the first six months of the year. A total of 798 cars placed has been handled by state police.

The aerial patrol includes a State 210 and a North American AT-6 owned by the Department with a third plane to be added shortly. The unorthodox patrol attempt to spot low flying aircraft and follow them to their base, where the plane is questioned for investigation.

their applications are sent to St. Marys, Massachusetts Valley Airport, Litchfield, Conn. Airport, and the California Coast Airport. Two applications for common carrier cargo permits under 202.5 have come from Time-Air, Irvine, Ind., Honolulu, and Bolson Van Lines Co., Los Angeles.

The Air Freight Association has charged that the effect of the new cargo rate tariff will be to force by 79 certificated airlines to discontinue initial rates of their major source of income. A second side list consideration of loss that planned changes will be planned lists. In its problem the association, ATFA, declared the scheduled airlines' tariff schedule redistributed percentages for the benefit and protection of shippers and common carriers and a "complete and fundamental" reorganization.

• **Some Rate Change**—Under the tariff, ATFA and the new rate per 100 lb. will be based on the shipping weight for dispatching 75,000 lb. as well as be charged for 100 lb. This appears to be a significant transportation

element which shows it costs relatively less to handle heavier shipments than lighter ones.

Replying to the freight forwarder, American Airlines and that "probably is the first loss in transportation history that a tariff charging the same rate of all shippers of less than called for (plentiful) quantities has been created in the industry."

• **Legal Questions**—State-Nab of the forwarder's petition, under provisions of the new tariff, American contending, that the tariff is designed to prevent indirect carriers from providing using the services of the certificated airlines.

Charging that the forwarder are "not lost," American and CAB had already conducted a hearing and investigation, after which it ruled that indirect carriers may not engage in an transportation without a certificate of public convenience and necessity. "All of the 13 members of ATFA are violating the Civil Aeronautics Act since none of them holds a certificate," American declared.

• **Safety Regulations**—EPA-CAB, which also charges operators required to inform about common carrier activity under 202.5 should be subject to safety provisions of parts 61 and 62 of the Civil Air Regulations or not the certificated airlines. It has found, however, that CAB has no authority in applying these regulations but instead has taken steps to prevent the 4000 carriers to continue operating under the last strict provisions of part 41 of the Civil Air Regulations governing unscheduled airlines.

CAB and CAB have doubt whether any aircraft operators are at present prepared to meet the safety requirements of parts 61 and 62. Civil Air Rules division has advised to the Board a proposal that a special Civil Air Regulation be enacted providing always less qualified to operate as common carrier under 202.5 to continue flying under part 41 until their application for a certificate has been ruled upon.



NEW WING OF SPEEDBREAKER

Clipped at 413-6 mph, Lockheed P-38B, speed record Shooting Star rivals faster, among as well, as well, most streamlined wings, polished nose and gun pods, wing warps, new wing has accurate, sharp, coping, landing, banking, rolling, steeply, smoothly, reduction in drag, straightening, surface, cutting and polishing. These is improved P-38B modified for record attempts in 1945.

15

Bending For Dihedral And Sweepback Simplified On Heavy 75ST Spar Caps

Combination heating-and-bending process developed at Ryan solves difficult production problem of forming large cross-section critical members.

Severe bending of heavy 75ST—one of the heaviest and strongest aluminum alloys—has been successfully accomplished by new methods at Ryan Aeronautical Co. Ryan designers had specified that spar caps were to be Alcoa 75ST with a cross-sectional area of 7 sq in. Also they were to be severely bent up for wing dihedral and twist back to provide sweepback. They used 75ST, which had been bent like spar caps, to their knowledge, was about 2½ sq in. as cross section.

Characteristics of 75ST—Expendable has shown that in the hot-rolled condition,

the aluminum alloy is too difficult to bend without fracture also that it is more vulnerable to corrosion. The metal can be stressed into yield in the W condition at 200,000 psi after hot bending, but that is no static test. Even for a very short time. Thus, in production, it would not be possible to produce the bending within the time necessary after hot bending to take advantage of the transient yield. Most large spar caps have been built up with laminated sections of 14ST aluminum alloy, capable in turn in the 4 condition.

A study of 75ST shows that despite the

disadvantage of bending at room temperature it is easier to work at elevated temperatures than after aluminum alloy. At 775 to 780 deg. F., the metal has better bending qualities than after 75ST or 14ST heat at 400 deg. F. Also there is no marked change in mechanical properties of the alloy in this temperature range. There is a slight increase in strength, temperature-dependent upon the time that the metal is held at temperature, and a slight decrease in elongation, accompanied stretching occurred at the bend area.

Hot-Bending With Done. Ryan engineers decided to heat the spar cap and bend them at 780 deg. F. in a special equipment set up. Kabeite metal roller blocks installed on the spar cap were connected to the spar section and insulated from it by Mervin sheets. These blocks rode on ground hardened steel guides so that they could slide outward under pressure of bending. The spar cap was then placed in a hydraulic press, the steel push attached to the upper head of the press this being connected to the spar cap and insulated from it.

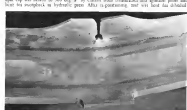
For heating the spar cap prior to bending in a liquidus condition phase shift control, and transformer size and primary plant current—440 v. 60 c. six phase fed to the Ignitor, the Ignitor being regulated by a heat control. Current was altered in conjunction with the heat control's setting which automatically determined the percentage of current required. The time heater measured the 400 v. current to 15,000 amp at 50 Ignitor transformer, and read-out was transmitted to the section to be bent. Spar cap was slightly angled with 32 deg. points where the conductor clamps made contact. Spacing of the clamps was carefully determined by estimating amount of metal desired to be bent to contacts to produce proper heat transfer.

Flow of current between spar cap clamps quickly heated the metal to 780 deg. F., and the hydraulic press then operated. Correct amount of bending was achieved by craps attached to spar cap extension. After bending for sweepback, spar caps were removed from the press and found to be identical to required shape.

Because of the past compressions stress recovery during the bending operation, it was necessary to cut sections in the same persons legs of some of the spar caps to prevent excessive distortion. These sections were generally rounded and polished, and no signs of premature fatigue failure resulted from this use.



LABORATORY SET-UP at Ryan for bending heavy spar caps of 75ST aluminum alloy.

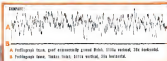


CLOSE-UP OF 75ST SPAR CAP showing arched and polished notch in compression leg, for preventing excessive distortion from compression stress during bending.



HEAVY EXTRUSION is seen here after bending for dihedral and sweepback.

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ken in 1928 and steadily improved since then, the profilograph determines surface irregularities to within one-millionth of an inch. Equipped with this measuring stick, Timken engineers were able to develop new finishing methods and machines, which have resulted in the microscopic surface accuracy of the Timken bearings you see today.

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Make these other important advantages of "LOK-THRED," which are explained fully in the new booklet pictured here:

1. Method American National Thread permits use of standard tools. (Page 4.)
2. Does not require lubrication. (Page 4.)
3. Locks assembly and loosens faster in service. (Page 9.)
4. Carries twice normal working load on 4" studs at end of thread under low compressive pressure. (Page 11.)
5. Does not gall when being drawn out and in service. (Page 12.)
6. Stronger in both tension and torsion than ordinary American National Threads. (Page 12.)
7. Has much higher fatigue limits than studs with conventional threads. (Page 12.)
8. Acts as shock and tear pins. (Page 14.)
9. Spins positively and automatically added tension and load tugging. (Page 17.)
10. Reverts itself on any application/has then an built-in adjustment for being removed back to its original condition value. (Page 17.)

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THE NATIONAL SCREW & MFG. COMPANY, CLEVELAND 4, OHIO

New Accuracy Attained In Gaging Metal Wear

Location as well as degree of wear can be measured by process which eliminates shortcomings of old methods.

Research, design, production, and maintenance engineers today can measure accuracy of metal wear in small as 0.0001 in. Developed at the National Bureau of Standards by S. A. McKee in collaboration with Dr. H. G. DeGarmo, this measuring process can be applied to screws, pins and to such other items as gages and dies.

By applying to the working surface the new diamond-shaped markings showing a definite change in size at exact readily measurable distances after diamond wear amounts of wear, the special McKee gage employed provides a determinable indication of wear where the marking is made.

Extensive tests have provided conclusive evidence that this diamond method meets accuracy shortcomings of other methods. Thus, the weighting method, given a value for the total wear but does not indicate where the wear occurred. Measuring the change in the dimensions of a worn part by the new technique is a basic degree and does not differentiate between actual wear and other changes that may occur, such as cleavage or distortion. And the method of determining the amount of wear material based on inherent after application, thus presents many difficulties and results in such as a qualitative indication in comparison with other data.

Method's Application—The McKee gage was designed primarily to locate and measure indentation marks on cylinder walls and pistons of spark plug engines, after permanent distortion of such parts during operation had previously nullified the advantages of any former methods of measurement. The indentation principle also would be applicable to other aircraft and rotary elements where the material in all such a nature that the indented marks will retain their shape in service. Thus a mark placed on the surface of a production die would readily indicate where it had been worn beyond specified tolerance.

With a cylinder in prime position as a specially designed fixture, marks are applied at any desired position with a diamond point forced by mechanical pressure to a predetermined depth into the part. The viewing and measuring apparatus, consisting of a compound microscope and eyepiece scale, is modified by the addition of two right angle prisms so that it may be used as a principle for viewing the marks at the periphery at the same reticulated so that a mark made at given pin settings will fall within the field of view of the periphery of the same setting—eliminating loss of time in searching for marks which are very small.

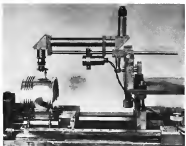
Characteristics of Mark Impressions of the mark in the metal surface comes a burr around the mark. Shape of the diamond indenter is such, however, that the upper portion of the burr is formed on the sides of the mark. Though no burr is visible at the ends of the marks, presence of a very slight radial elevation may account for the wear deviation from a straight line shown

by cylinder curves. It was found that most of the burr could be easily removed by rubbing lightly with fine polishing paper. For use with cylinders, a short metal gage was found convenient, the gage holes being so arranged that polishing paper can be rubbed over a small area at each mark with ease. Possible use of cutting or grinding methods for producing marks without burr and sharp-pointed tools presents a promising field for further investigation. If this can be accomplished, accuracy of determining wear would be increased.

Since the marks are placed with the tang on perpendicular to the cylinder axis, relation between the change in depth of mark to change in length of long run is affected by the curvature of the cylinder. While



APPARATUS UTILIZING DIAMOND INDENTATION METHOD for measuring extremely small amounts of wear. Square cylinder is worn mounted in fixture with gage in position to mark surface. Relatively small amount of wear will reflect definite change in size or wear measurable dimensions of mark, providing very accurate indication of wear at its location.



MICROSCOPE AND EYEPIECE SCALE modified as principle indicates viewing and measuring apparatus used in conjunction with McKee wear gage. In this setup, apparatus is being used to view and measure change in dimension of mark placed on piston surface to determine amount of wear.

this effect was obtained easily for the parabolic cylinder and, possibly, correction for curvature would provide greater accuracy in determining wear.

A study was also made of the possibility of error resulting from the use of the cylinder set being at right angles to the radius where calibration is made. Comparisons indicated that if the diamond-shaped mark was measured to within a ratio of not less than 4:1 to 50 along its major axis, the error would be no greater than two per cent (approximately 0.0001 in.). It was found that the apparatus could be adjusted to produce a reconstructed mark and that other marks other than the ones included as well as cylinders of the same diameter size, could be made well within the limits of accuracy without further adjustment.

Test Data. Results of a number of engine tests have shown that marks in engine cylinders occur in three shapes: elliptical to provide reasonably accurate wear measurements. Experience has indicated that results are not as satisfactory after the marks have been worn to about one-fourth or less of their original length. Hence greater accuracy may be obtained by carefully measuring the size of the mark and direction of the test, to prevent this condition.

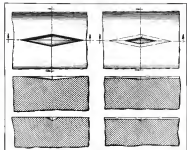
Position of the wear measurement depends upon the condition of the cylinder liner. With new marks, points are sharp and the lengths are accurately determined. But, after the engine has been operated, the marks are somewhat blunted and it is necessary to estimate the position of the point. Under normal conditions, the cylinder wear can be determined with an accuracy of 0.0004 in. and the wear is usually constant to 0.0002 in. (assuming operation with marks in the points indicate that, with the other dimensions, the marks have a much greater tendency to distort and results are not entirely satisfactory, another difficulty being tendency of the metal to become cupped and with carbon making it difficult to distinguish the marks).

Most of the work for determining the performance of the marks in service was made with Pratt and Whitney R-1335 engines having chromic-nickel steel cylinder walls of 1.716 in. diameter. In these tests 25 marks were made in each cylinder and being spaced 60 deg apart at each of 4 levels—approximately 2, 4, 6 and 8 in from the cylinder skirt end. Upper sets of marks was in contact with the top ring only while the ring was contacted by oil ring. Typical cylinder wear patterns obtained in these tests reveal satisfactory use with respect to the use of the cylinder, which would be impossible to determine with most measurements of diameter.

The McKee gear provided preliminary estimate of an indication of wear only when used measurements of changes in diameter of the pistons and cylinders do not differentiate between wear and data loss that may occur during a test. It also indicates wear at a particular point on the

surface, whereas measurements of diameter indicate changes at two points and projected wear is not generally available for determining the amount of wear at each point. Also, the method does not require the careful technique needed necessary to measure

wear diameter with corresponding accuracy. Since temperature variations do not disturb the accuracy with the measuring method, it is not necessary to bring the part to a definite temperature before making measurements.



ENLARGED DIAGRAMS of typical indentations made with McKee wear gage. View at left (top to bottom) are plan, longitudinal, and transverse sections of mark before wear, while those on right represent same marks after material has been worn. Shape of mark remains substantially same, but length decreases in proportion to thickness of material removed. For the diamond employed, ratio of depth to length of long axis is about 1 to 35—about 0.015 in. deep by long axis of about 0.015 in.

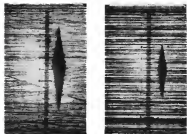


PHOTO OF TWO TYPICAL MARKS (after engine operation) used for determining cylinder wall variations of cylinder wear by diamond indentation method. Marks were originally about 0.015 in. (0.015 in. long). Below shown approximate actual length of 1 mm. (0.0104 in.), but when observed in viewing apparatus are 24 in. long. For diamond used and cylinder made steel cylinders, total length of scale represents about 0.0012 in. as depth, hence the small scale device is equivalent to depth more than 0.0012 in. of wear. The given size of order of accuracy of method.

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Mounting Jet Engines

Basic design considerations for proper installation of new type power plants shows versatile arrangements possible.

By J. C. BEBCHER,
Armstrong Corp., Turbine Dept., General
Electric Co.

Though much has been written on jet engine design and operation, little has been said on a vital subject—mounting.

Forward here, then, are design considerations, along with a case history (the General Electric J45 (TC 150)), on which a Design Analysis was presented at Armstrong Week, July 7 and 14, 1947.

Requirements for a satisfactory mounting installation of aircraft engines may be broken into four major considerations:

1. The mounting should isolate, or at least reduce, vibration between the engine and its air duct structure.
2. It should safely carry the weight, in static and dynamic loads, transmitted during any operation of the aircraft.
3. It should prevent loads due to its own reaction and operation of the engine, and those due to airplane structural deformation from being carried into the engine.
4. It should allow quick installation and removal of the engine.

Engine Vibration Isolation.—In mounting a reciprocating or jet-propelled type engine, the engineering personnel and propeller produce large amplitude vibrations which must be isolated from airplane structure. This necessitates the use of rubber mounts and results in a comparatively high weight for the mounting structure. The rubber bearing no propeller had a single rotating shaft mounted on precision bearings, but a low amplitude vibration with a frequency equal to engine speed. The TC 150 is designed to a maximum peak to peak vibration amplitude of .005 in. and a value of .005 in. as a case for required performance. The extent that no special provision for when this isolation is necessary in mounting the engine.

Considerable flight test experience has shown that metal to metal contact can successfully be used in mounting jet engines. However, good engineering practice dictates the desirability of using a vibration absorbing material between the engine and

airplane structure to avoid possible fatigue failures over long periods of time.

► **Loading Considerations.**—The design of the mounting from the loading viewpoint can best be considered from both the engine and airplane point of view separately. The types of load to be expected are:

1. Thrust load due to thrust developed by the engine.
2. Vertical loads, which are usually weight loads of the engine and any other payload, gun, and loading conditions.
3. Lateral loads due to gusts and some rare maneuvers of the plane.
4. Gyroscopic loads, which are a result of yaw in pitch maneuvers. This type of load produces a couple which would be taken by the transverse plane under a pitch maneuver and by the front support and moment in a yaw maneuver. The engine tends to move in the opposite plane to that in which the airplane moves. That is, if the airplane yaws, the engine will tend to pitch, and vice versa. The magnitude of the gyroscopic couple may be calculated:

$$C = \frac{I \omega}{g}$$

$$C = \text{Couple} = \text{lb-ft}$$

$$I = \text{Moment of inertia of engine rotating parts} = \text{lb-ft}^2$$

$$\omega = \text{Angular rate of precession} = \text{rad/sec}$$

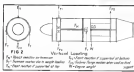
$$= \text{Engine speed} \times \frac{\pi}{30}$$

$$g = 32.2$$

- **Combustion of the flame loads per**



FIG. 1



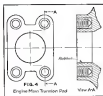
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Although the mount would not strictly fall in the previous list, it was included in the point of construction, a ball bearing system may result. When the load would be transmitted to the attachment bolts with small set moment, as in load distribution and possible rising of attachment bolts.

Intermittent in the previous is aluminum or magnesium alloy, the attachment bolt holes are provided with end bushings. The bearing is a distance from the load as cutting from the moment due to vertical load applied at the transition support, thus the distance between the point of support and the load. The transition support is then the attachment bolt load, thus the vertical distance between the attachment bolts.

The bearing is made of sufficient size to enable the use of a transition length, based on experience, suitable for any condition.

Fig. 5 shows a detail of the front support rod design from which a drag link type of support is used. The drag link normally is at an angle to the rod, but is a low end of the transition, and a vertical is provided to relieve shock loads from the attachment bolts. The transition bolts on the rod are present under pressure conditions which can result in a pulling load on the bolts. Bearings are therefore provided to enable these loads to be taken without the transition bolts in other engine cases or aluminum.

The forward transition flange is part of the aft frame structure and the widest point could be the widest flange bolts. When this, if this flange is used as a third support point, a specific number of bolts must be provided to be a bearing.

► **Mount Design**—The most difficult problem is make sure the transition bolts are on the engine also act on the engine. The first problem is to provide rod structure to mount the engine. The necessity of the engine in installing the use of either front or aft points for the third support, also in mounting the engine is more satisfactory may be able to provide cushion at one place but not at the other.

Considering that the main transition is a method of attachment must be provided between engine structure and the engine.

The transition recommended for the TC-912 consists of a ball and socket combination loosely as shown in Fig. 6. The condition now meets the actual requirement of a satisfactory mount merely by designing and fabricating "ball" into it. The distance the distance between the point of support and the rod face, the smaller end lighter end the transition be. This also forces the engine pad by putting the load on the attachment bolts. The transition flange should be sufficiently rigid so that under high loads it will not tend to arc between the bolts and that engine is given load on them.

The third mounting requirement is taken care of as follows:

A transition for rod construction and expansion of the engine is accomplished by making one transition a fixed ball and socket, the other a sliding point as a ball. The amount of expansion is small and can be readily provided for in the transition design as shown in Fig. 7.

B. Relieving structure between ball and socket, and pivot and ball socket loads, due to engine structural deflection, from the engine.

The fourth mounting requirement is met by being able to design the pivot points of the transition with a quality design.

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tablets with overhangs in shown in Fig. 6. The ball bearing is designed so that it will open with the engine would still be held in the engine. This is a common method by bringing the bottom portion of the bearing close to the center, thus requiring a slight amount of lift on the as per before it could move backward.

Considering the third point of support, a method of attachment must be provided between engine structure and engine. A drag link type of support, shown in Fig. 5, is recommended for this purpose. Sufficient strength is provided by making the ball of the pivot method end use to make the transition loads applied. When loaded at the front of the engine, a small amount of axial growth between the main transition and the support point is readily provided for, by the ball and socket configuration. A slight movement of the ball in that bearing enables the engine to grow freely.

The design also allows for increased engine expansion, thus the third point between the two halves of the link (bearing) flange end must be provided so that any adequate number of flange in contact to give required strength to take the load imposed. This method is more provided by substituting an area that has bolts to break the connection. The same condition is the support may ride on a track and be held in place by a simple lock.

The same type of support can be used at the lowest, turbine flange but greater clearance for axial and axial thermal expansion of the engine must be allowed for at that location.

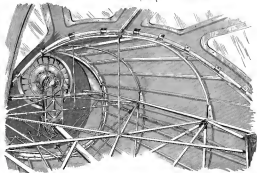
A standard point of the design could be used on all engines, however, due to the fact that the loads imposed vary between light and heavier aircraft, it is possible to use a somewhat lighter design on the lighter with some stress in weight. This, in addition, between engine and engine is desirable to design the mount to meet the specific condition. Therefore, at load up to the present, it is considered more desirable to let engine design govern and construction of the ball and socket configuration.



deLachar Helicopter

Lycoming engine cooling fan (shown below) is positioned at bulkhead near fuselage rear with gearbox mounted just forward of fan, and dovetailed to front rotor main shaft from lower portion of gearbox. Cooling air is taken through screened panels at left and right of fan, also through other panels adjacent to engine. Fuselage structure consists of welded tub ing with braced tubular rings and wooden longitudinals providing circular shape. (Also See March 1947, AVIATION)

Rotor highlights of tandem rotor 'captor' constructed by Tuckerton, N. Y., firm are: (A) Main balance bar supporting rotor head, (B) blade pitch control lever, (C) main hinge pin, (D) pitch control lever, (E) push-pull control rods actuating cyclic and collective pitch, (F) push-pull rod guide, (G) collar acting as limit stop to angular displacement of plane of rotation. Above (G)—as an integral part of hub—universal joint permits angular variation of plane of rotation.



Here's how you can visualize a C-O-Two Smoke Detector



Fold along the dotted line. This part of the page is the size of a C-O-TWO Aircraft Smoke Detector—2 1/2 inches long by 2 1/2 inches wide by 4 inches deep. It weighs less than 2 1/2 pounds.

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Table Superchargers This high-speed compressor for the new Corvair offers a peak 50 pounds per minute at an output pressure of 12 psi. Variable-speed drive keeps output constant despite changes in engine speed & primary cam timing & is fully enclosed for the Corvair 340.



Subirrigation tanks: Used for cooling hot, compressed air from the adiabatic compressor. This now constitutes an important air separation turbine respiratory compressor and heat exchanger. Types being produced for various plants have capacities from 7 to 100 pounds of air per minute.



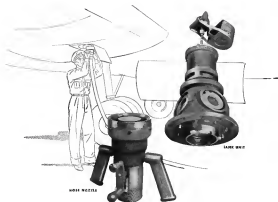
Oil Coolers: After each oil cooling fanstage is long, wide, short, fast with an elliptical oil cooler, that with water protection, that with electric Pop control, that to produce the maximum controlled oil cooler output, that to equip the system with a low cost oil cooler.

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Simplifying Airborne Radar

West Coast firm develops anti-collision, terrain scanning unit weighing but 65 lb. which can be contained in housing 19 in. wide and less than 1 ft. deep.

Simplification of airborne radar is evident in the AF-10 unit now under development by Allison Radar & Equipment Co. of Los Angeles.

Refinements of operation believed to be needed by pilot and cockpit are being incorporated in the unit, which can be housed in a container 19 in. wide and less than 1 ft. deep, holding all operating mechanisms required for the wartime AF-10 scope radar weighing 65 lb.

With its true 20 ft. rotating "dial" reflector, the entire assembly has a vertical depth of 30 in., and has been designed for mounting in any four-engine transport without jamming the nose configuration either then, or replace with a plastic shell the metal skin in the field of the set's 6 deg. radar beam, which scans in arc of 180 deg. The set is designed to operate from the 400 cycle, 115 v. single-phase main power supply of a U. S. low-engine transport, and its operation draws 600 W. Service of the Conquest, DC-4 and DC-6 is indicated; that power system is simple to install in the demands of the unit. Under crystal control, the unit operates at a frequency of 9375 megacycles.

Technical advancements displayed in the AF-10 and its use in the field, as well as the one-half of the equipment by David K. Wilson, chief engineer of the company, having his name, and two engineering associates who were active in military radar design.

► **Stabilizing** Tachometer—An antibraking feature of the set is the stabilization of its in-

terference (constant, lead-to-lag) by a single small gyroscopic mechanism located there. To maintain accurate radar stability, even of the beam in its sweep area, weight is not allowed electrically, by means of the secret two gyroscopes, with an electric lead-off from them to a servo amplifier having two stabilizing means that can hold alignment of the dial. A weight point of 40 lb. is used in mechanical assembly is cleared for the AF-10 gyro set.

An interesting evidence of weight economy in the mounting of the dialer. Wire guides carrying power separately to the two dialer are employed also in dial suspension arms.

Removal of the cover of the set's central housing discloses a compact arrangement of some principle electronic and mechanical components, so arranged that each of the set's can be removed easily for inspection or replacement. This of the arrangement in the main rotating the suspended dialer at 30 rpm to provide the cockpit "scope" with 60 scans per min.

Grouped about the hub are the unit's 16 frequency amplifier chips, radio frequency wave guide, magnetron, power beam modulator, oscillator, radio frequency control stage, low voltage power supply (400 v.), vacuum driving mechanism and gun heat, and the radio frequency switch that electrically cuts in power to each dial at a return at 350 deg. sweep and cuts off power at a focus in field of work.

Placing of the beam in its true and one-

half micro-second beam at the rate of 400 scans per sec. throughout its sweep. Allison's mechanical cable drive of the set's scope scanner is considered by the designer to be a single and trouble element, as being the use of two stainless steel and interlocking electronic elements.

► **Weight Saving**—Coupling this equipment within a single light weight housing offers advantages of weight savings over old-style units that required separate housing for their various electronic and mechanical components. Reduction of weight means saving more weight, and also reduces maintenance, inspection and trouble shooting problems.

In attempting to give the pilot a new sense of direction and direction, and in a manner scanning mechanism having no interposition, Allison engineers have sought to reduce to the lowest number the manual controls of the apparatus. Aside from the main power switch, the pilot is confronted with only three control knobs mounted directly beneath the "scope."

Each of the extreme right controls is made of the "scope's" beam, the central knob is for setting the scope's gun position, and that of the left is the range selector. Its three positions identified both by red and by white green and red light side illumination of a "Pilot's" scope cover equipped with range and altitude lens.

► **Scope Control**—The scope is an RCA "A" type, of high precision and high accuracy. While the pilot views a scanning of the scope of the rate of 60 scans per min. Time available in the scan is about 100 scans per min. Because the scope's dial, rotating at the rate of the scope, is set at slightly different angles two separate fields of search are covered, one scan sweeping directly ahead and up the other tilted downward 30 deg. sweeping the terrain.

Results of their search are transmitted di-



COMPARATIVE SIZE AND WEIGHT of new lightweight Allison Radar & Equipment Co. unit (left) with older unit in closely above box.



COMPACT OF ALLISON RADAR shows simplicity and clean design of unit.

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Personal Plane Manufacturers Tighten Belts Against Dim Future

Sales manager changes, reduced production marks trend as industry prepares for hard winter.

By ALEXANDER McSURELY

Personal aircraft manufacturers are tightening their belts and preparing for a "long, cold winter," with dim prospects for most models for any large scale plant selling below cost.

Aircraft production at most of the major producers plants is probably at its lowest this season, immediate future days with several plants shut down completely and cut short on a limited production basis. Large inventories of planes at plants and in the hands of dealers and distributors make many models immediately available in yards.

Piper Aircraft Corp., leader in 1946 personal plane production, is undergoing an inventory reorganization following recent appointment of W. C. Scherer, former Chrysler Corp. official, as general manager. Wilbur B. St. John, sales manager, has left Piper, and John Miller, executive vice manager, has been transferred to a field sales post in the middle west. T. E. Wolf, vice president in charge of sales, is taking over the sales manager duties in consultation with his men. Production which had been suspended for several weeks at the main Rock Haven plant now has been resumed but work on a limited basis.

Armstrong Aircraft Corp., Middletown, Ohio, second largest producer, in 1946, was scheduled to resume production after a several weeks virtual shutdown, with production mainly concentrated on the new play a order for Army liaison plane modification of the Champion trainer model.

Appointment of Floyd Simons as general sales manager of Avco, replacing Robert Derriman, was a change resulting from Derriman's resignation for a leave of absence for personal reasons. Simons was manager of sales region for Avco, but having his return to the corporation after serving as an AAF liaison pilot in the European and Mediterranean theaters, in World War II.

Republic Aviation Corp., was due to resume limited production in the Boston neighborhood following a company vacation only in August. Nevertheless Republic was meeting considerable customer demands from its stock of completed Stinson Republic

recently announced acquisition of Grumman C. Skeper is sales manager for the Sea Bee, and appointment of Don M. Paffen, Jr., former Republic test pilot, to succeed him.

Boeing Aircraft Corp., reported one of the brightest sales in the aviation picture with announcement that the company had five deposits for additional low plane business, to resume combined production up to Sept. 23 at the rate of eight planes a day for the next a half day a week. On that date Boeing plans to drop production to four planes a day. Boeing is continuing to require 30 days advance deposits on planes, which makes it possible for the Wichita

company to vary its production schedule according to customer demands without building up a large inventory of planes.

Wenger Division of Consolidated Value Corp., announced plans following a recent dealer meeting for meeting production at the Wichita, Kan., plant in anticipation of a slackening of sales during the summer and fall.

Lancaster Airplane Corp. is continuing to slow production of Defiant with a transfer of 65 hp. aircraft planes, waiting at the factory, ordered by dealer in transit for the C-47 engine but not yet accepted due to complications in contract rework. Lancaster's 65 hp. planes are reported saving more rapidly.

Cessna Aircraft Co. was reported to slow production at Wichita.

Engineering & Research Corp.'s plant at Knoxville, Tenn., was shut down pending sale of Escaper now in inventory at the plant. Inventories were for resumption of production on a slow basis, late in August, or whenever the company was ordered to a better working level.

Boe-Aviation Corp. at San Diego,



TRANSFERRING NAVION

Aerial of first track at San Diego with Navion facilities, aerial beginning of transport by Ryan Aeronautical Corp. of physical properties included in recent purchase of low plane plant from North American Aviation. Transfer of manufacturing parts and subassembly by track is described as one of largest track transportation jobs on West Coast since the war.

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these jobs. ¶ Pioneering, faithful research and scientific manufacture have built the excellence of these aircraft fuselages to a position of leadership.



Manufacturers generally look forward eagerly to larger plane buyers, who might use some of their harvest money for new

Feeding timing report operators is the first thing training would probably concentrate largely with training players directly on hand rather than need additional funds in new equipment, at a time when their own

place sites are there. Reports of a slow down in maintenance and repair business are making a name for itself.

an airplane now in the field was stronger, last week than a competent observer who seriously made a trip through western and eastern aspects. There are some indications that the downtown extends over other regions also.

While most of the companies' sales departments are anxiously striving to develop export business, the difficulties involved in dollar exchange and the relatively small number of customers in most East Asian countries also can cloud to export business plans and sets a fairly tight limit on the percentage of business that can be based abroad.

► **Several Chemo-**Analysis of the peanut plant market indicates that the industry is "going through the wringer" as a result of over-expansion in the immediate post-war period and over-production, which in some cases has orders for the plants produced.

Present indications are that one of the empires will survive the 'crucible' but will be much restricted and will produce one much smaller state. How the strongest conditions that are undergoing now will affect the collapse of future personal planets to take the place of the ones now being manufactured may be one of the more serious consequences. Possibly a search and development for new planets will be hampered as much as other phases of the human life by the resources that are being forcibly withdrawn.

Bell Aircraft Expands 'Copter Mechanics Course

Bell Aircraft Corp. has expanded its helicopter operations training course from two to five weeks and will broadcast accept qualified "free lance" students. The month-long program and students personnel had been admitted. An ABE license, is still required for enrollment.

The last two weeks of the course are devoted to assembly, disassembly, balance and rigging instruction; the second two weeks include preparation of the helicopter for the 100 hr. and 300 hr. in sections.

Airport Survey

Approximately 88 percent of all deposits in operations are Class 1 and under, those most suitable for private leasing according to CNA standards as of July 1. Of a total of 5,191 fields, 5,160 are in flat country.

During the month, the number of exports in operation rose from 1,874 on June 1, a gain of 177. While commercial fish showed a gain of 129, halibut, fish decreased by 68, and CAA intermediate fish by five. Registered aircraft on July 1 numbered 93,933, of which 983 were used by scheduled air carriers.

Support and awards program for
 first and last.

	July 1	June 1
Airports in operation	5,258	5,374
Commercial	3,812	3,878
Municipal	1,572	1,612
C.A. Intermediate	188	189

Veterans	999	600
All others	285	250
Algorithms by Class		
Class I and nodes	1,068	1,089
Class II	626	615
Class III	512	486
Class IV and roots	791	794
Total Registered		
Algorithms	91,920	92,340

Scheduled Air Carrier Aircraft	993	100
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Flying Farmers Hold Second Convention

Second annual convention of the Young Flying Farmers Association, sponsors of National GMA, the end of each year has a three day meeting and features a flying tour of much of the state and a short course in airplane aerial spraying, lawnmower and

Meetings will be held at Oklahoma A & M College, while flight instructors will be concentrated at Stillwater military airport. Among awards to be given during the convention will be for the most outstanding contributors to rural aviation. In the events that has the largest number of participants in attendance, and for the family in attendance that has the largest number of adults.

In advance of the national convention, a number of state farm bureau organizations have held meetings.

► **Obituaries.**—More than 240 attended the second annual meeting and field day at Don Norstrom Field near Columbus and elected area officers. Mission C. Baker is president, Clifford E. Gibbs, vice-president and WRD team captain, secretary-treasurer. Ray E. Kahan continues as executive secretary. It was decided to put on a bid for the 1994 national convention.

► **Wisconsin**—First state-wide meeting was held at Marshfield with about 100 members and 10 plenary. Directors, who select the officers, are: Bert Harbeck, John O'Loughlin, L. C. Fossell; Ocas Director Thomas Tazari, Sherbet King, Kenneth McClain and Mr. Elgin Herbeck.

■ Michigan—At a one-day meeting of Lansing, fellow lawmakers delivered action on the question of affiliating with the various organizations leaving the matter to the decision of the board of directors. The conference attracted 150 in all places in Detroit. Lee Tulliver, president of the office, and A. S. Spencer, vice-president of the Michigan Veterinary Association, and J.

Flying Farmers Hold Second Convention

Second annual convention of the National Franchising Association, a network of independent O&Os, the real time work. "We're not a franchisee, but that will feature a strong team of men in the state and a short course in education, social services, economic and

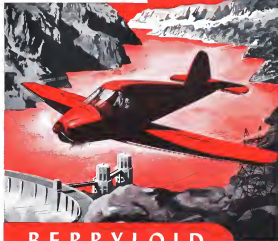
Henri H. Gross, End, William J. Wilber, Ernest D. M. Snowberry and Raymond Whelan, directors.

Honorary memberships were conferred on Gov. Kim Rye, William E. Stout, chairman of the state aeronautics commission; Col. Floyd E. Evans, director of the department of aeronautics and other



SKYTEL ACCOMMODATES FLYING TOURISTS

At Butler Field Base, Idaho, testing crews find the new comfortable, unobtrusive chair, offering accommodations which may bring desert pilots out of their cave to spend the night. The 31-inch-tall chair, made of aluminum, is designed to be used by the Air Force.



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AVIATION WEEK, August 4, 1947

AVIATION WEEK, August 4, 1945

SALES & SERVICE 39

Airborne Parts Speed Kansas Wheat Harvest

The supply of used parts service men and repairs for combines during the Kansas spring wheat harvest last month provided a demonstration of another unique and valuable service of the personal in place. Three Cornes, operated by Paul Radwin of Liberal, Kansas, averaged about one trip a day during the harvest, supplying parts directly to the scene of the break down.

Radwin, owner of the Liberal Aircraft Co., formulated the plan several weeks before harvest time and observed in several Kansas newspapers "Is the owner of a backhoe during harvest season, use time and money by having replacement parts flown directly to you held by the Liberal Aircraft Co., Liberal, Kansas?" At the same time, Radwin contacted with local equipment dealers in the area and related their role in the plan. When harvest began, he called the owner of the Liberal Aircraft Co., described the part needed and whether he did the job, finding the right dealer with the right part, flying it directly to the farmer's field.

Radwin has also been known over time to plan most accurate weather plot, and has earned a considerable dealer in distribution parts to pick up new cars.

Airport Lectures

A five-day series of lectures and seminars covering nearly every phase of airport development and operation is being held Aug. 15-17 at the University of California School of Aeronautics, with the program put together primarily to appeal to airport engineers and administrators pursuant to CAA's State Airport Act completed in the preparation of the short course, and several CAA officials will be among the speakers.

Topics to be discussed in lectures range from 100 miles to air-line airports, design, planning, development, among important sources of aircraft, issues, safety, and public relations.

Record Cub Flight

A Piper Cub airplane has completed an 180-hour air flight from Rapid Lake, N. Y., to Conestoga, New York, piloted by Les Wolff, who took his first flying lesson just two weeks prior to the flight. The Cub (two-engine, 65 hp) Piper Cub Trainer covered the distance in 11 1/2 days flying time and the top speed in days on heavily packed, including orange grove, small lakes along the route. Wolff, who has spent most of his life hunting and fishing in Northeast Ohio, purchased the Cub last Spring to combine his writing and photography through the use. He has been flying, hunting and fishing along the route by dropping down to lakes when required.

BRIEFING FOR DEALERS AND DISTRIBUTORS

NEW ADMA MEMBERS—Fifteen new members of the Aviation Distribution and Manufacturers Association have been added since the mid-July ADMA meeting. Richard N. Boushager, vice-president of Searchair Corp., Escondido, Pa., and ADMA membership chairman, has announced new distributor members: Isaac City Aeronautics, Inc., Logan Airport, Boston, Mass.; Buffalo Aeronautical Corp., Buffalo, N. Y.; Mountain Airport, Fairbury, Nebraska, Inc., Western Valley, N. C.; Brown Bros., Miami, Fla.; Northwest Aircraft Distributing Co., Vancouver, Wash.; Monroe Aviation Corp., Miami, Ind.; American Division, Elliotts Auto Electric Co., Chicago, S. C.; Laing Co., Inc., Wichita, Eastern Aircraft Corp., Ryd Airport, Raleigh, N.C.; Western Skyways Service, Portland, Ore. New manufacturer members: Flighters Fobles, Inc., New York; Western System of Kingston, New York; 566, Elmhurst Auto-Lite Co., Toledo, Ohio; Flaming Membership Co., Grand Rapids, Mich.; and Aircraft Hardware Mfg. Co., New York. Total association membership now stands at 84 companies.

OPERATION AT EINGRUPP FIELD—Sandon Aviation, Inc., is taking over as a building of EINGRUPP Field, Rockville, Md., where it will serve as EINGRUPP (delivered to the District of Columbia, Virginia, Maryland area, and will also operate a repair and service base for (aircraft) using the field. Bob Sandon, head of the new operation, recently W. L. (Jack) Nicks, at distributor in the area. Sandon previously had been associated with Engineering & Research in charge of the aircraft department. Nicks, formerly in the CAA War Training Services, and later in the CAA New-entrained Flying Advisory Committee, has accepted a leaving position in Texas. The new Sandon operation provides for the first time a complete service operation at the EINGRUPP field in addition to a sales organization.

SKYWAY NO. 1—First of what is expected to be a series of national flights by personal planes is now being planned through responsibility of the Los Angeles Chamber of Commerce, and Washington (D. C.) Board of Trade, and will be between the two cities, as a 40 mi. wide semi-circular flight route, designated as Skyway No. 1. The route will use the Los Angeles through Arizona and Texas, with a southern branch going through California, Nevada, Idaho, Utah and Pennsylvania, and a northern route, which turns north-west the coast, via Alaska. Competitor of the Personal Aircraft Council and the CAA has already been related for the project, which could develop eventually into a large national network of private flight routes, with better routes set up as various states by local state government departments. The route will be thoroughly monitored with special signs designating it as Skyway No. 1, and will be accepted to ensure that it provides plenty of good airports and overflight arrangements of any aircraft along the way. C. S. Bremer, Los Angeles Chamber of Commerce president, has offered the use of his own beach houses for one of the route flights. Complete information on hotels and airports will be made available to pilots using the new Skyway. Airports which find themselves included in the Skyway route or in other routes which will follow in the future, will have a considerable advantage in the amount of "through" plane traffic which the route is expected to generate.

PILOT CERTIFICATES—An amendment to Civil Air Regulations, Subsection 20.51, greatly simplifies the procedures of pilots who failed to renew their commercial certificates before the most expiration date July 1. A CAA statement accompanying the amendment points out that pilot competency is determined by the exchange of certificates so that the pilots should be permitted to apply to the Administrator for extension of certificates, without examination or flight test. The regulation states: Any person who on June 30, 1947 held a valid private or commercial certificate and who failed to exchange such certificate . . . may not withdrawing such holder and whether after viewing obtain a pilot certificate with appropriate ratings upon application to the Administrator.

ADEQUATE MARGINS—The old question of how much is an adequate margin of profit for the distributor came up at another discussion of the ADMA meeting at Mountain, which Ray Snyder, president of Skyway Aircraft Corp., Chicago, offered results of an Association study on the costs of an airplane, parts, supplies and equipment distributor organization. On the basis of this study, costs have been running between 24 and 25 percent, Snyder said, with an inventory turnover about four times a year. Total gross profit earned by most distributors averaged 27 1/2 percent in 1945 and 1946, while a recent survey indicates the gross margin has dropped 24 percent to the low (July 1946) level 1947. Snyder points out that the number of distributors of aviation equipment has grown from approximately 90 in 1943-4 to more than 300, who handle several different products and lines. This reduced margin is mostly attributable, he believes, to manufacturers who attempt to reduce prices but hold up their own prices to the distributor, who discounts the volume discounts, or who manufacture discount schedules that do not permit enough margin to cover operating costs. Snyder concludes: "There are too many cuts in the supply chain, and there is just no sense in letting one's head against a stone wall if the vendor will not admit the necessity of the distributor's making an adequate profit."

—ALEXANDER MCKEITHLY

The pumps which supply gasoline to the engines, that feather the propellers, or operate the landing gear of a large transport may seem far removed from the pump which cleans and lowers the pistons of the industrial truck, and in kind and usefulness it, but they aren't. . . for they both utilize Pisco Pressurized Power.

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8. SERVICEABILITY
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AIR TRANSPORT

U.S. Carriers Operating 61% Of All Scheduled Plane Miles

Cab survey shows five American companies flying more mileage per week than any foreign line; margin of supremacy is narrowing.

By CHARLES ADAMS

More than 61 percent of all plane miles scheduled each week by the world's common carrier airlines are flown by American operators. But the large margin of supremacy enjoyed by the U.S. had some in 1946 is narrowing.

A survey made by CAB's Economic Research Board shows that 47 scheduled U.S. airlines, including 15 Atlantic carriers, were flying 7,087,000 plane miles weekly as of April 1, 1947. In contrast, 140 foreign lines (including carriers in Russia, Thailand and Rumania) were operating 4,817,000 plane miles weekly.

► **Rankings**—Great—Of the country's 5,667,000 weekly plane miles total April 1, 6,135,000 were flown from domestic and 1,572,000 internationally. U.S. planes to weekly plane mileage increased from 4,947,000 March 1, 1946, to 6,081,000 Oct. 1, 1946, but fell back to 6,135,000 by April 1 of this year partly because of an unusual variation and partly because of a re-attachment due to a traffic slump. U.S. international carriers boosted their weekly plane mileage from 963,000 on March 1, 1946, to 1,215,000 Oct. 1, 1946, and to 1,470,000 April 1, 1947.

Passenger operations scheduled plane miles rose from 1,817,000 per week March 1, 1946, to 4,414,000 Oct. 1, 1946, and 4,917,000 April 1, 1947. The weekly plane mileage for the world increased from 5,941,000 in March, 1946, to 12,414,000 April 1, 1947. During this period, the U.S. share of the total decreased from 66 percent to slightly over 61 percent.

► **U.S. Carriers Lagged**—Of the 26 scheduled common carrier airlines in the world operating more than 100,000 plane miles weekly, 15 are U.S. companies. American Airlines, which flew 1,215,017 plane miles weekly (1,181,517 domestic and 45,500 on its Mexican route), was the largest operator on April 1, 1947.

The next four ranking carriers also were U.S. companies—United, 1,194,517 plane miles weekly; Pan American, 980,276; TWA, 594,512 (516,194 domestic and 78,318 foreign); and Eastern, 525,215 (511,799 domestic and 14,016 to Puerto Rico). In sixth place was the largest foreign carrier, BOAC, which scheduled 498,986 plane miles weekly as of April 1.

► **Trans-Canada Seventh**—Seventh in 1946 was the weekly plane mile base was Trans-Canada Air Lines, 366,277. North-west Airlines, 319,948; Capital Airlines (PCA), 281,415; Air France, 236,948; Australian National Airways, 207,414; Delta Air Lines, 215,641; National Airlines, 201,594; Royal Airways, 238,207; and KLM, 205,181. (Other carriers including more than 100,000 plane miles weekly as April 1 were, in order of rank, British Overseas Airways, Western Air Lines, Chicago & Southern Air Lines, Compaña Mexicana de Aviación (Mexican), American Overseas Airlines, South African Airways, Transair, Air India (Colombian), Crossair (Brazil), Finesse Du Nord, and Mid-Continent Airlines.)

Largest active route system in the world on April 1, 1947, belonged to Air France, which had an unreluctant mileage of 57,314,304.40 was second with 45,846 miles. Latest figures for U.S. carriers showed PAA with the largest active network as of December 1946—39,372 miles. TWA was second place with 78,474.

Super Service

United Air Lines has launched an intensive campaign to make regular passengers of customers taking their first plane trip.

As part of its program, United is stamping the letters "U" on all tickets purchased by "first fliers." Since UAL employs handling staffs called postcarders has been asked to devote extra time and attention to these handlers. Stewardesses, particularly, have been requested to answer any and all questions which the new passengers may pose and to greet and interview upon each arrival.

KLM states the plan is effective but has not disclosed whether any vacation or travel has been reduced making the rule a first step to obtain super service.

Colonial Seeks Extensions

Colonial Airlines, which this month as reported its routes from Washington and New York to Bermuda, has asked CAB for authority to operate additional links from Boston and Philadelphia to Bermuda. The carrier also wants to extend its present Bermuda routes to Miami via Nassau, Bahamas, and to extend its Montreal-New York service to Miami via Philadelphia, Baltimore, Washington, Charleston and Jacksonville.



EXPANSION AT LIMA

Lima, Peru, airport, home base of Peruvian International Airways, soon will have one of the largest and best equipped buildings in the world. Structures shown above originally were to be completed early this year, but dual Customs has delayed work. Peruvian International, headed by Harold L. Goring, formerly lieutenant governor in charge of Air Transport Commission, is now operating twice weekly between Lima and Havana with DC-4s. Current plans to extend its routes north to Washington, New York and Montreal, and south to Santiago, Chile (McCrone Hall World News photo).

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CAB Blames Pilot For AOA Accident

CAB's investigation of the accident in which an American Overseas Airlines DC-4 crashed against a mountain ridge shortly after taking off from Stephenville, Newfoundland, last Oct. 7 has found pilot error to be the probable cause and has shifted CAA's blame.

The board's report said the DC-4 pilot was at fault in misreading the distance of takeoff toward high terrain over which adequate clearance could not be gained and stated that the captain was not due to the problem because, for a take-off climb in reverse, CAA also developed that under CAA, not the airline had placed restrictions on the use of reverses by itself at Hermes Field and that no special precautions had been established for clearing to reverse altitude.

► **Data Available:** "No significant data existed in the subject of the DC-4 adequately described the terrain at the vicinity of Hermes Field, and all the information necessary to permit the pilot to determine a climb gradient which would avoid obstruction in the direction of takeoff was available to him," the report stated. It added that the Airport Air Transport Command had installed use of Runway 7 (from which the DC-4 took off) and said it was ground position for flights allowing that runway to make a right turn shortly after takeoff to avoid high terrain.

When crash in the history of U. S. commercial aviation met that time, the AOA accident, in which 21 79 aboard the plane were killed, had been noted again by Sen. Pat McCarran (D, Nev.) in letter CAA CAB safety police McCarran, who from an independent air safety board, charged [New York News, April 7] that CAA's investigation of the accident was "inadequate" at the time of the crash and that subsequent questioning of witnesses was incomplete, revealing inconsistent testimony, and failed to determine where CAB regulations and CAA enforcement procedures were faulty.

► **McCarran's Proposition:** is a letter which called for the board to take into account the fact that, McCarran had stated that was inadequate that CAB might attempt to gain responsibility on the dual pilot. "The incident forgetting the accident was there," he said. "It was not a coaching testimony as to whether CAA, responsible had actually suspected the Stephenville airport prior to the crash and had relied entirely on information provided by American Overseas Airlines."

From a investigation of the AOA accident, representatives of the Civil Air Regulations with respect to airline operations, and application by CAA of transport category rules, had been completed as providing adequate coverage of terrain elements in the immediate vicinity of the site at the time of takeoff and landing, CAB said. Part of it



SNACK BAR

United Air Lines is providing a between meal snack for passengers in its DC-4 flying between San Francisco and Honolulu. Snack bar service means types of snacks, cold meats, stuffed dried eggs, salads, stuffed olives, soups, sandwiches, candies, and other delicacies.

the Civil Air Regulations requires that takeoff clearance only be based on airports, not on obstructions, and under such weight limitations that in the event of obstructions of any nature, a vertical clearance of at least 10 ft will be required in the subsequent flight in the runway approach.

► **CAB Service Limited:** Since the operation of these limitations is dependent upon pilot's knowledge of terrain which differ for each airport and therefore make impracticable uniform regulations treatment, demonstration of the critical of area within which these regulations shall be applied is left to the discretion of CAA. In practice, CAA has continued to correct to an area within approach limits into the airport.

► **Regulating Data:** Information in AOA to CAB with respect to Hermes Field was received in the accident investigation, and it was apparent that the high terrain area which the DC-4 crashed had been the way to the runway for the purpose of approach. Since it was not clear the state of the airport provides single run for aircraft to maneuver to avoid obstructions lying beyond that distance, (CAA) approval of operations at Hermes Field was not to be appropriate.

► **Extension of Rules:** The subject of the AOA, which the CAB said it was at a distance of 1,100 ft. shortly after the pilot's takeoff in reverse from the end of Runway 7. CAB said that while the Civil Air Regulations does not intend to regulate all details of air transportation, and, therefore, has not specifically required that such procedures be established at such airports as Hermes Field. "Some regulatory directives may be required in extreme cases as that."

The board in May concluded proposed regulations regarding air traffic to allow the procedures for climb from such airports where terrain at other obstructions in the vicinity present a hazard to flight at night or under instrument conditions.

June Traffic Slump Causes PCA Deficit

After two successive months of profitable operation, Capital Airlines (PCA) slipped into the red again during June. The result of heavy passenger load factors which President C. H. Bell Moore attributes to the receipt of more DC-4's.

Historically, PCA's June passenger revenue has been higher than in May. For this year, however, of the month the carrier's load factor slumped from 79.79 percent in May to 50.06 percent in June. Operating profit, which was \$49,008 in April and \$77,087 (\$40,000 net) in May, turned into a \$300,000 and lost in June.

Passenger revenue during June was \$248,000 while May, but the carrier was successful in reducing its breakeven load factor to a new low of 57.5 percent. PCA suffered a net operating deficit of \$2,111,000 in the first quarter of 1947.

Despite the loss, PCA's cash position improved substantially over the last six months of the year. On Jan. 31, the carrier had cash and securities totaling \$2,147,000. By June 30, PCA's cash and securities had increased to \$2,448,000, up \$301,000.

Domestic, Overseas Lines Operating 888 Aircraft

Number of aircraft operated by U. S. domestic and international carriers reached a new peak in June, with the entire DC-3 workforce still the most common type of commercial transport plane.

CAB statistics show 888 planes used by scheduled American airlines in June 1947, compared with 687 in June 1946, 696, 679 in June 1945, 679 in June 1944, and 678 in June 1943, when much of the airline's equipment had been replaced by the brand new DC-3's. In June 1947, against 503 in June 1946, and 500 in June 1945.

Despite DC-4's, which were not used in scheduled commercial or transportation in June 1947, numbered 136 in June 1946, and 237 by June of this year. DC-4's, which made their initial appearance only this spring, numbered 28 by June, while Lockheed Constellation's increased from 34 in June 1946, to 52 in June 1947.

Other planes flown on U. S. airline the June included 12 Lockheed Lodestar (against 15 in June 1946), 4 Boeing Stearman (against 1 in June 1946), 1 Boeing 370 Stearman, 7 Stearman and 7 Boeblingers.

Cabin Nips Buzzer

TWA's president LaMotte T. C. Calkins has Armed Bird Bureau that his company plans to move its headquarters into Kansas City. He told business and civic officials recently that TWA is a Kansas City of just adding that "it is a matter of time economic which will hold us here."

• AN ANNOUNCEMENT TO THE

Aviation Industry

BY

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Streamlined to meet the exacting needs of the Aviation Industry, this new Division is devoted exclusively to the further creation, development and production of improved electrical components.

Domestic Carriers Show Profit in May

Led by the industry's "Big Four"—American, Eastern, TWA and United—the domestic airlines showed their largest monthly profit of 1947 during May. The carriers as a group had moved into the black for the first time this year in April, largely because of Eastern's savings (Associated Press, July 7). But May was the first 1947 month in which the majority of the 16 lines showed a profit.

► **(Earnings)** United—With American displacing Eastern as profit leader, the industry's last operating income rose from \$193,515 in April to \$1,300,981 in May. American earned \$173,616; Boeing, \$27,465; Delta, \$27,239; Eastern, \$60,119; Island, \$5,608; Mid-Continent, \$11,817; Capital (PCA), \$27,219; Eastern, \$60,119; Island, \$5,608; and Western, \$121,110.

Deficits during May were experienced by Chicago & Southern, \$9,121; Colonial, \$68,016; Continental, \$15,491; National, \$15,144; Northwest, \$106,501 and Northwest, \$25,197. By contrast, none of the 16 carriers showed operating losses for April.

Despite profitable operations during April and May, the domestic lines now add, for the first time this year because of the unprecedented \$18,746,184 deficit during the first quarter. Aggregate loss for the first five months of 1947 is \$16,231,105, against a \$1,776,000 deficit for the same period in 1946, worst year financially in U. S. commercial aviation history.

► **Transatlantic Carriers—**Transatlantic, U. S. flag carrier on the Trans-Atlantic run, also made their best showing of the year during May. American Overseas Airlines reported \$159,617 operating income and a 90.75 percent load factor for the month. Two American Airways (Atlantic Division) had a \$106,119 operating profit and 75.64 percent load factor, and TWA earned \$15,161 on an 85.11 percent load factor.

United showed a \$65,770 operating profit and 85.35 percent load factor on its San Francisco-Honolulu route during May, first month of operation for the service. Of the seven airlines active on May, Pioneer was the only one in the black.

Air Cruises Planned

American International Airways, Inc., New York, plans to inaugurate a program of 12 day air ocean tours New York to Miami, Havana, Nassau and Jamaica this month. The week-ended cruises will use twin-engine, six-engine Boeing 14 flying boats accommodating 60 passengers.

Irish Postpone Service

Lufthansa, which had planned to start once weekly Constitution service from Shannon to New York this fall, has postponed inauguration of its transatlantic operations until next spring.

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Uncertificated Lines Testing CAB Policy

Two cases recently placed before CAB will go for the second determining whether unauthorized passengers among operators using airline-type equipment have a legal right to fly in transportation.

In its reviews of the uncertificated exemption [Section 202.1 of the Economic Regulations] last May, CAB stated flatly that there was a need for operators who could meet requirements for aircraft using time special conditions. Whether a small piston the Board is willing and

able to move that enough to permit such special service will be shown by its action on the requests of Rount Airlines, Pasadena, N. C., and Transair, Inc., New York, for short-term exemption authorizing scheduled passenger carrier operations without a certificate.

► **Opposition Expected**—Rapidly-scheduled services, which are actively opposing Rount Airlines' bid for certification at its expense or, at least, its own expense to fight "competition by exemption." Concerning the first case the late date on which both operators asked for exemption. Rount filed only after its summer air line program had begun, while Transair's application was received by CAB just

three days before the date when the exemption would be made effective, if granted. Unless CAB under Rount Airlines' special exemption in the same decision, that uncertificated carrier's unique program of "stopover" "stopovers" may have to be discontinued. The North Carolina operator states it has been advised by the Board's enforcement and litigation section that its DC-3 or two have a regularly in excess of that permitted by Section 181.

► **Placed in Future-Dependent** In CAB, Rount declared it would be forced to use paid operators, still a substantial part of its service, release employees and reduce integration of its present operations with the Board since its water-skiing season. The Board's decision, however, scheduled the summer. The carrier's advertised summer program includes 16-day round-trip transportation: twice leaving New York, Cleveland and Chicago on eight of the nine Sundays in July and August.

Per American Airways, National Airlines, United Air Lines and TWA already have asked CAB permission to intervene in an opinion to Rount Airlines' application for a permanent certificate. [Aviation News, June 30]. National and large part of its traffic is of vacation and resort nature and that approval of Rount Airlines' certificate request "could result in substantial diversion of revenues."

► **Eyes Interstate Traffic-Traffic** A leading air corporation, which will permit carriage of interstate as well as interstate passengers on the temporary operation, which it plans to conduct between New York City and Springs, N.Y., every day during the Springs here next week, Aug. 4-10. The company, which operated the service last on an interstate basis during 1946, said it did not want to incur the full of its outstaying by having to serve them all to determine which law applied in nearby New Jersey or some other state.

Recent New York Springs license as a certified airline route a 50-mile, Transair told CAB. The carrier stated the proposed operation presents a special type of service which can be performed more adequately by uncertificated smaller operators than by certificated lines. It added that the service represents the type which the Board had in mind when it initiated the plan of airports as shown in its own portion two statute up in Transair has available aircraft-type equipment for the Springs Springs run, including one G-4 still under conversion, two DC-3s, one Lockheed L-12A, and two Lockheed Electra and a Lockheed 12A.

► **Board's Position**—CAB's latest opinion of the uncertificated exemption stated that "there are probably serious types of services which lead themselves to uncertificated as carrier operators and yet, due to their very nature, might best be conducted with a regularly as means of that permitted by Section 202.1. Such might be the case with so-called 'in town' or all expense lines

conducted such worked to some small region."

The Board then issued an exemption in the type of operator to apply for a certificate or as appropriate exemption—where which both Rount Airlines and Transair have not taken.

Other industry developments:
► **Amphibious Air Transport**, Long Beach, Cal., has asked CAB for a certificate authorizing carriage of passengers and property from Los Angeles, Burbank and Long Beach to Jordan, California Island. Company is flying the route with four German amphibians.

► **Richman Airlines**, Miami, N. Y., recently completed its first scheduled passenger route within an accident.

► **Northern Airlines**, Seattle, has begun DC-3 cargo service to Mexico City via Salt Lake City and San Antonio.

► **MR. Melkay Airways**, Anchorage, recently started carrying scheduled freight and passenger service in New York and Chicago in cooperation with two other uncertificated carriers, which are to meet the Alaska operator's plans at Seattle.

► **Rogers Air Transport**, New York, City, has been requested to conduct scheduled service in Chicago, New York, St. Louis and other points with a DC-3.

► **Ray Valley Air Service, Inc.**, San Francisco, has asked to begin "commuter" service between San Francisco, Sacramento, Seattle and Mexico only this month with Cessna 441s.

► **Aviation Airways**, Anchorage, Wash., has augmented daily service to Seattle with Republic Airlines equipment.

► **U. S. Airlines**, in Fort Worth, Tex., is opening new cargo service from Tuxedo, N. J., to Havana, Cuba.

Airlines Still Plagued By No-Show Problem

The airlines' current problem position apparently is almost as serious as it was last summer when the carriers spent to initiate positive against passengers who failed to cancel reservations prior to which cancellations had been made.

TWA states that in the face of present agreed competition for passengers the penalty system has weakened "almost to the point of collapse." At a recent ATA meeting on the problem, it was determined that airlines did take their own cancellations—those who fail to make cancellations between one airline and another on an interline ticket; reschedule and ship-out passengers who fail to leave a contact number with the airline at their expense to be transferred; and head passengers who fail to show up at the originating station.

During the first eight days of July so far, shows as TWA's losses become as serious as that the carrier might then in one of its most serious problems. TWA will conduct an advertising and publicity program to combat the situation.

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H. B. Miller, Walsh Resign from TWA

H. B. Miller, TWA's vice president in charge of public relations, and Richard Walsh, his executive assistant, have resigned their positions with the airline.

Formerly director of the Navy's public information with the rank of rear admiral, Miller joined TWA a year ago. He has not announced his future plans. Walsh will become assistant to J. Gerald Kene, chairman of the Republican National Committee.

Announcement of the two resignations closely followed the appointment of Dale Armstrong, former director of Radiofree America's public relations, as public director of TWA (Aviation Week, July 14).

Other personnel developments:

• **Air Express International Agency, Inc.**—L. A. Chelot has been appointed vice president. Formerly express traffic manager of Pan American Airways, Chelot will have headquarters in New York.

• **Air Freight Forwarder Association—Libby A. Reeves** has been named general counsel with office at 412 Metropolitan Bank Building, Washington, D. C. Until six months ago, Reeves was a CAB public counsel.

• **American-Widder D. Teck**, director of route development, has been transferred from New York to the Washington office.

• **CAB—David E. Poulos**, chief of the General Rules section of the Civil Aeronautics Board, has resigned effective Aug. 29 and will take a position in the aircraft industry.

• **Colwell—John F. Jones** has become superintendant of Economic operations.

• **Nitwood—Robert E. Wilford, NAL's** special representative in Cuba, has been elected treasurer of the Air Transport Association of America.

• **Northwest—George F. Scott** has been named general traffic and sales manager following the resignation of Warren H. Smith, general sales manager. Scott has been general traffic manager since March, 1946.

• **Shick—W. F. Rogers**, former UNRRA director of transportation for the Italian, has been appointed assistant to Paul F. Shick, president of the aircraft line.

• **United—T. Lee, Jr.**, has become director of education and training. He will also serve as personnel manager for the carrier's Chicago maintenance base.

Frye in New Post

Jack Frye, former president of TWA, has been named president of General American & Film Corp., replacing George W. Sawyer, who resigned recently. Frye became chairman of General American's board of directors last April, shortly after leaving TWA following disagreement with the policies of the airline's majority stockholders, Howard Hughes.

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Progress in the Battle for Safety

Clearing progress reports come from the airlines on new collision warning devices. But it will still be another tough winter.

Civil Aeronautics Board is circulating a suggested regulation which would require installation of electronic terrain indicators by January 1. The devices must show absolute clearance of the aircraft above terrain and set off a visual or audible signal in the cockpit when the aircraft dips below the minimum.

This proposal was recommended by President Truman's Air Safety Commission and we believe it should be rejected by the proposed date. It is the one positive step which airlines can take now to insure safer flying.

There are grumbling indications that several airlines will not wait for the CAB requirement. They are pushing ahead on their own, after too long a period of inactivity by the industry generally.

TWA, which already has electronic altimeters, continues installation of Hughes-adapted equipment bought from war surplus.

Continental has ordered the Hughes equipment. Several others are considering it.

American and Pan American are at work.

United has announced purchase of 200 RCA electronic altimeters to equip its fleet before winter. As reported elsewhere in this issue of *American Week*, the RCA unit weighs only 30 pounds. An alarm may be set at any range up to 3,000 ft. below and ahead of the plane. Lights and an indicator needle report to the pilot.

Although it was no surprise to observers of the fiercely competitive air transport industry, the unexpected announcement of the TWA collision warning indicator set off a series of petty outbreaks. Instead of giving credit to the first airline to make such an earnest effort to do something about collisions, some competitors jeered and struggled against any move to prevent accidents like American Overseas Airlines' near-miss crash in New Bedford, analyzed by CAB the other day.

Neither TWA nor United represent their equipment as perfect. But it certainly is far better than nothing at all. The President's Safety Commission has agreed, by approving both, along with one or two others.

It is true that terrain clearance indicators are only a partial answer to air safety. But the type of accidents they will minimize is among the worst and most frequent. Speedy action to equip our airlines will do much to restore public confidence in air transport that has been shaken by slow-moving CAA, sensational Congressional investigations and a tendency on the part of the airlines themselves to wait for something better instead of making use of what is available now.

Current Army, Navy and Congressional thinking is tending to the use of radar as the basic tool of a modern airways system capable of handling all-weather operations and heavy traffic density. Sooner or later CAA and its antiradar group will simply have to cry uncle to the inevitable. In typical CAA fashion, it will probably be later—years later.

Nevertheless, terrain clearance indicators are here. We accept the word of the President's Commission for it that any of several are adequate. The industry gives every indication of meeting its obligation to the public to install them as soon as money can buy them and mechanics can install them.

Even so, we cannot expect miracles. It will be another expensive winter. There will be far more cancelled schedules than the public now expects. Many hopes for improved service next winter, voiced by Congressional investigations last spring, have vanished in legislative blemish and government red tape.

When the chips were down Congress slashed air safety funds to ribbons, leaving the airlines with about the same extraneous money they flew last winter, while piling up huge deficits from bad crash publicity and shortened schedules.

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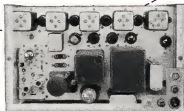
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